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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/715,418	11/16/2000	David A. Lewin	10716/12	7715

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EXAMINER	
ROMEO, DAVID S	
ART UNIT	PAPER NUMBER
1647	

DATE MAILED: 02/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/715,418

Applicant(s)

LEWIN ET AL.

Examiner

David S Romeo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 02 December 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) 5-28,30,31 and 33-40 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-4,29 and 32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) 1-40 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 9,13 6) ☐ Other: _____

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DETAILED ACTION

Claims 1-40 are pending.

Applicant's election with traverse of group I, claims 1-4, 29, 32, as they pertain to the polypeptide of SEQ ID NO: 3 in Paper No. 16 is acknowledged. The traversal is on the ground(s) that the Office has not met the necessary burden to sustain the restriction requirement. This is not found persuasive because an application may properly be required to be restricted to one of two or more claimed invention if they are able to support separate patents and they are either independent (MPEP § 806.04 - § 806.04 (j)) or distinct (MPEP § 806.05 - § 806.05(i)). Groups I-XIII are distinct for the reasons given in the Office action mailed July 2, 2002 (Paper No. 14). Furthermore, separate classification (i.e., class and subclass) of distinct inventions is sufficient to establish a prima facie case that the search and examination of the plural inventions imposes a serious burden upon the Examiner. See M.P.E.P. § 803. Such separate classification is set forth in the Office action mailed July 2, 2002. Applicant has offered no evidence to rebut this showing. A search is directed to references which would render the invention obvious, as well as references directed to anticipation of the invention, and therefore requires a search of relevant literature in many different areas of subject matter.

The requirement is still deemed proper and is therefore made FINAL.

Claims 5-28, 30, 31, 33-40 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 16.

Claims 1-4, 29, 32 are being examined to the extent that they are drawn to or encompass

SEQ ID NO. 3.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-4, 29, 32 are rejected under 35 U.S.C. 101 because the claimed invention is not supported by either a specific and substantial asserted utility or a well established utility.

The present invention provides a S100 cytokine-like polypeptide referred to as FCTRX. In particular, SEQ ID NO: 2 was extended by assembly with other murine nucleic acid molecule fragments (page 7). SEQ ID NO: 2 comprises an ORF encoding the amino acid sequence of SEQ ID NO: 3 (page 8). SEQ ID NO: 3 has a high degree of similarity with the S100 family of proteins (page 9, lines 16-17). SEQ ID NO: 3 includes sequences that are homologous to S100/ICaBP-type calcium binding proteins. Proteins containing calcium binding domains are implicated in cell growth and division. Expression of these proteins is reported to be deregulated in transformed cells. High levels of these proteins have been reported in some breast cancers. See page 10, full paragraph 4. The FCTRX polypeptides are homologous to members of the

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S100 cytokine family. The S100 group of proteins are calcium-binding molecules with cytokine and chemokine activity. Members of this family have been implicated in the Ca^{2+} -dependent regulation of diverse intracellular activities. See page 11, line 18, through paragraph bridging pages 11-12. Furthermore, Schafer (v17) teaches that suggested functions of some EF-hand

5 Ca^{2+} binding proteins are diverse, expression of S100 proteins can either be upregulated or down regulated in disease states, and most evidence linking EF-hand Ca^{2+} binding proteins with disease states is only circumstantial (Tables I and II; page 139, paragraph bridging columns 1-2, through column 2). Extracellular S100 proteins stimulate neuronal survival and/or differentiation, cause neuronal death via apoptosis, and stimulate and inhibit the activity of

10 inflammatory cells. See Donato (w17), Abstract. Further, Pietas (A15, cited by Applicants) indicates that GenBank accession no. AY007220 is downregulated in lung carcinoma cells. The diverse functions of EF-hand Ca^{2+} binding proteins is evidence indicating that the members of the S100 family do not share a specific, substantial functional attribute or utility, despite having structural features in common, and that membership in the S100 family does not impute a

15 specific and substantial utility to the FCTR_X polypeptide of the present invention.

The present application's SEQ ID NO: 2 was identified by examining differential gene expression in mammary tumors that arose in Wnt-1 transgenic mice (page 87, last sentence). However, differential display is the first of many steps required in the discovery of a novel pharmacological target, especially given that the function of the factor is most likely unknown.

20 Therefore, further action should be taken to characterize the functions of a particular gene of interest, including ... validation for the importance of the gene in disease processes. See Wang (u17), page 279, column 2, full paragraph 1.

The specification asserts therapeutic, screening, discovery, diagnostic, and analytic procedures and other activities for the polypeptide of the present invention. However, these utilities are not considered to be specific and substantial because the specification fails to disclose a specific biological activity of the present polypeptide that comprises the amino acid sequence of SEQ ID NO: 3. For a utility to be "well-established" it must be specific, substantial and credible. All expressed nucleic acid molecules and polypeptides are, in some combination, likely useful in such procedures. However, the particulars of such procedures with the polypeptide of the present application is not disclosed in the specification. Therefore, this is a utility which would apply to virtually every member of a general class of materials, such as any collection of proteins or DNA, but is only potential with respect to the present invention. Because of this, such procedures or utilities are not specific and do not constitute a "well-established" utility. Further, because any potential diagnostic utility is not yet known and has not yet been disclosed, the utility is not substantial because it is not currently available in practical form. Moreover, use of the claimed polynucleotide in an array for toxicology screening is only useful in the sense that the information that is gained from the array is dependent on the pattern derived from the array, and says nothing with regard to each individual member of the array. Again, this is a utility which would apply to virtually every member of a general class of materials, such as any collection of proteins or DNA. Even if the expression of Applicants' individual polypeptide is affected by a test compound in an array for screening, the specification does not disclose any specific and substantial interpretation for the result, and none is known in the art. Given this consideration, the individually claimed polypeptide has no "well-established" use. The artisan is required to perform further experimentation on the claimed material itself in

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order to determine to what "use" any expression information regarding this nucleic acid could be put.

With regard to drug discovery and development, there is no way to assess the meaning of an individual hit, result, or observation from this procedure because one would not know the biological significance of the polynucleotide(s) or polypeptides which is(are) being evaluated. Without this information, the results of such a procedure are useless because one would not know if the polynucleotide expression or polypeptide activity should be increased or decreased or even what significance could be attributed to a change in expression or activity. "Congress intended that no patent be granted on a chemical compound whose sole 'utility' consists of its potential role as an object of use-testing." Brenner, 148 USPQ at 696. The disclosure does not present a substantial utility that would support the requirement of 35 U.S.C. §101. Applicants' assertion that the claimed invention has utility in therapeutic, screening, discovery, diagnostic, and analytic procedures and other activities for the polypeptide of the present invention does not meet the standards for a specific, substantial, and credible or well-established utility for reasons set forth above.

Until some actual and specific significance can be attributed to the polynucleotide and polypeptide of the present invention one of ordinary skill in the art would be required to perform additional experimentation in order to determine how to use the claimed invention in the asserted utilities. Thus, there was no immediately apparent or "real world" utility as of the filing date.

After further research, a specific and substantial utility might be found for the polynucleotide and polypeptide of the present invention. This further characterization, however,

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is part of the act of invention and until it has been undertaken, Applicant's claimed invention is incomplete.

The present situation is analogous to that which was addressed in *Brenner v. Manson*, 148 U.S.P.Q. 689 (1966), in which a novel compound which was structurally analogous to other compounds which were known to possess anti-tumor activity was alleged to be potentially useful as an anti-tumor agent in the absence of evidence supporting this utility. The court expressed the opinion that all chemical compounds are "useful" to the chemical arts when this term is given its broadest interpretation. However, the court held that this broad interpretation was not the intended definition of "useful" as it appears in 35 U.S.C. §101, which requires that an invention must have either an immediately apparent or fully disclosed "real world" utility. The court held that:

The basic quid pro quo contemplated by the Constitution and the Congress for granting a patent monopoly is the benefit derived by the public from an invention with substantial utility. . . . [u]nless and until a process is refined and developed to this point-where specific benefit exists in currently available form-there is insufficient justification for permitting an applicant to engross what may prove to be a broad field. . . . a patent is not a hunting license. . . . [i]t is not a reward for the search, but compensation for its successful conclusion.

The present claims encompass a polypeptide of as yet undetermined function or biological significance. There is no evidence of record or any line of reasoning that would support a conclusion that the present invention was, as of the filing date, useful in a manner envisioned by the application. Until some actual and specific significance can be attributed to the polynucleotides and polypeptides of the present invention one of ordinary skill in the art

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would be required to perform additional experimentation in order to determine how to use it.

Thus, there was no immediately apparent or "real world" utility for the present invention as of the filing date. In the absence of knowledge of the biological significance of the polynucleotide of polypeptide of the present invention, there is no immediately evident patentable use for it. To

5 employ a protein of the instant invention in any of the disclosed uses would clearly be using it as the object of further research. Such a use has been determined by the courts to be a utility which, alone, does not support patentability. The claimed invention as disclosed does not meet the requirements of 35 U.S.C. §101 as being useful.

Claims 1-4, 29, 32 are also rejected under 35 U.S.C. 112, first paragraph. Specifically,
10 since the claimed invention is not supported by either a specific and substantial asserted utility or a well established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention.

Claims 1-4, 29, 32 are rejected under 35 U.S.C. 112, first paragraph, as containing
15 subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claims are directed to or encompass a polypeptide comprising the amino acid sequence of SEQ ID NO: 3, a polypeptide comprising a mature form of SEQ ID NO: 3, a polypeptide comprising a variant of a mature form of SEQ ID NO: 3, a
20 polypeptide comprising a variant of SEQ ID NO: 3, a polypeptide comprising an allelic variant of SEQ ID NO: 3, a polypeptide comprising an allelic variant of SEQ ID NO: 3 wherein the variant is encoded by a single nucleotide polymorphism, a polypeptide comprising a fragment of

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the amino acid sequence of SEQ ID NO: 3, a polypeptide comprising a fragment of mature form of SEQ ID NO: 3, a polypeptide comprising a fragment of a variant of a mature form of SEQ ID NO: 3, a polypeptide comprising a fragment of a variant of SEQ ID NO: 3, and a polypeptide comprising a conservatively substituted variant of any of the forgoing variants.

5 The claims do not require that the polypeptide possess any particular biological activity, nor any particular conserved structure, or other disclosed distinguishing feature. Thus, the claims are drawn to a genus of polypeptides that is defined only by some level of sequence identity. It is noted that that there are no limits on the size of "a fragment" and a single amino acid is "a fragment". It is further noted that SEQ ID NO: 3 is a partial, i.e., less than full-length,
10 polypeptide because the initiator methionine is missing. Yet the claims encompass a full length polypeptide. Applicant's were not in possession of the full-length polypeptide.

To provide adequate written description and evidence of possession of a claimed genus, the specification must provide sufficient distinguishing identifying characteristics of the genus. The factors to be considered include disclosure of complete or partial structure, physical and/or
15 chemical properties, functional characteristics, structure/function correlation, methods of making the claimed product, or any combination thereof that fully set forth the claimed invention. In this case, the only factor present in the claim is a partial and/or variant structure. The specification fails to disclose a specific biological activity of the present polypeptide that comprises the amino acid sequence of SEQ ID NO: 3. A "laundry list" disclosure of every possible activity does not
20 constitute a written description of every species in a genus because it would not reasonably lead those skilled in the art to any particular species with a particular activity. Knowledge of the amino acid sequence of SEQ ID NO: 3 or the nucleotide sequence of a polynucleotide encoding

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SEQ ID NO 3 cannot predict a native or naturally occurring allelic or single polynucleotide polymorphism thereof. Accordingly, in the absence of sufficient recitation of distinguishing identifying characteristics, the specification does not provide adequate written description of the claimed genus.

5 Vas-Cath Inc. v. Mahurkar, 19USPQ2d 1111, clearly states "applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention. The invention is, for purposes of the 'written description' inquiry, whatever is now claimed." (See page 1117.) The specification does not "clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed." (See Vas-Cath at
10 page 1116). As discussed above, the skilled artisan cannot envision the detailed chemical structure of the encompassed genus of polypeptides, and therefore conception is not achieved until reduction to practice has occurred, regardless of the complexity or simplicity of the method of isolation. Adequate written description requires more than a mere statement that it is part of the invention and reference to a potential method of isolating it. The compound itself is required.
15 See Fiers v. Revel, 25 USPQ2d 1601 at 1606 (CAFC 1993) and Amgen Inc. v. Chugai Pharmaceutical Co. Ltd., 18 USPQ2d 1016.

One cannot describe what one has not conceived. See Fiddes v. Baird, 30 USPQ2d 1481 at 1483. In Fiddes, claims directed to mammalian FGF's were found to be unpatentable due to lack of written description for that broad class. The specification provided only the bovine
20 sequence.

Therefore, only an isolated polypeptide consisting of the amino acid sequence set forth in SEQ ID NO: 3, but not the full breadth of the claim meets the written description provision of 35

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U.S.C. §112, first paragraph. Applicant is reminded that Vas-Cath makes clear that the written description provision of 35 U.S.C. §112 is severable from its enablement provision (see page 1115).

5 Claims 1-4, 29, 32 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The claims are directed to or encompass a polypeptide comprising the amino acid sequence of SEQ ID NO: 3, a polypeptide comprising a mature form of SEQ ID NO: 3, a
10 polypeptide comprising a variant of a mature form of SEQ ID NO: 3, a polypeptide comprising a variant of SEQ ID NO: 3, a polypeptide comprising an allelic variant of SEQ ID NO: 3, a polypeptide comprising an allelic variant of SEQ ID NO: 3 wherein the variant is encoded by a single nucleotide polymorphism, a polypeptide comprising a fragment of the amino acid sequence of SEQ ID NO: 3, a polypeptide comprising a fragment of mature form of SEQ ID NO:
15 3, a polypeptide comprising a fragment of a variant of a mature form of SEQ ID NO: 3, a polypeptide comprising a fragment of a variant of SEQ ID NO: 3, and a polypeptide comprising a conservatively substituted variant of any of the foregoing variants. The claims do not require that the polypeptide possess any particular biological activity, nor any particular conserved structure, or other disclosed distinguishing feature. Thus, the claims are drawn to a genus of
20 polypeptides that is defined only by some level of sequence identity. It is noted that that there are no limits on the size of "a fragment" and a single amino acid is "a fragment". It is further noted that SEQ ID NO: 3 is a partial, i.e., less than full-length, polypeptide because the initiator

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methionine is missing. Yet the claims encompass a full length polypeptide. The specification fails to disclose a specific biological activity of the present polypeptide that comprises the amino acid sequence of SEQ ID NO: 3. The skilled artisan is left to extensive experimentation involving randomly modifying SEQ ID NO: 3 and through trial and error, and fundamentally unpredictable experimentation is left to determine how to use the variant polypeptides.

Moreover, there is a lack of predictability in the art. Predicting structure, hence function, from primary amino acid sequence data is extremely complex and there doesn't exist an efficient algorithm for predicting the structure of a given protein from its amino acid sequence alone. See Bowie (x16) page 1306, column 1, full paragraph 1, or Ngo (y16) page 433, full paragraph 1, and page 492, full paragraph 2. In view of the breadth of the claims, the limited amount of direction and working examples provided by the inventor, the unpredictability in the art and the quantity of experimentation needed to make or use the invention based on the content of the disclosure, it would require undue experimentation for the skilled artisan to make and/or use the full scope of the claimed invention.

Claims 29, 32 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The claims are directed to or encompass a pharmaceutical composition comprising a pharmaceutically acceptable carrier. The terms "pharmaceutical" and/or "pharmaceutically" encompass and/or imply preventing, diagnosing, alleviating, treating, or curing a disease or condition in a mammal. When a claim to a compound or composition is limited by a particular

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use, enablement of that claim should be evaluated based on that limitation. The claims do not require that the polypeptide possess any particular biological activity, nor any particular conserved structure, or other disclosed distinguishing feature. The specification fails to disclose a specific biological activity of the present polypeptide that comprises the amino acid sequence

5 of SEQ ID NO: 3. The specification fails to provide specific guidance for, and working examples of, preventing, diagnosing, alleviating, treating, or curing a disease or condition in a mammal with the polypeptide of the present invention. The skilled artisan is left to extensive, random, trial and error, and fundamentally unpredictable experimentation in order to determine how to use the polypeptide of the present invention for preventing, diagnosing, alleviating,
10 treating, or curing a disease or condition in a mammal. In view of the breadth of the claims, the limited amount of direction and working examples provided by the inventor, the unpredictability in the art and the quantity of experimentation needed to make or use the invention based on the content of the disclosure, it would require undue experimentation for the skilled artisan to make and/or use the full scope of the claimed invention.

15 The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

20 Claims 1-4, 29, 32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-4, 29, 32 are indefinite because they recite the term "a mature form". Because the instant specification does not identify that material element or combination of elements

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which is unique to, and, therefore, definitive of "a mature form" an artisan cannot determine what additional or material functional or structural limitations are placed upon a claim by the presence of this element. The metes and bounds are not clearly set forth.

Claim 4 recites the limitation "the chosen sequence". There is a lack of antecedent basis
5 for this term. The metes and bounds are not clearly set forth.

Claim 4 is indefinite because it is unclear if Applicant is claiming a variant polypeptide that is a conservatively substituted variant of a variant polypeptide or a variant polypeptide that is a conservatively substituted variant of SEQ ID NO: 3. The metes and bounds are not clearly set forth.

10

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

15 (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4, 29, 32 are rejected under 35 U.S.C. 102(b) as being anticipated by Ni (A2, cited by Applicants). It is noted that that there are no limits on the size of "a fragment" and a
20 single amino acid is "a fragment". Ni discloses a pharmaceutical composition comprising an isolated polypeptide and a pharmaceutically acceptable carrier and a kit comprising one or more containers containing same (page 49, full paragraphs 1, 2, and 4). The polypeptide comprises a "a fragment" of SEQ ID NO: 3, or mature or variant form thereof.

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Conclusion

No claims are allowable.

ANY INQUIRY CONCERNING THIS COMMUNICATION OR EARLIER COMMUNICATIONS FROM THE EXAMINER SHOULD BE DIRECTED TO
DAVID S. ROMEO WHOSE TELEPHONE NUMBER IS (703) 305-4050. THE EXAMINER CAN NORMALLY BE REACHED ON MONDAY THROUGH
FRIDAY FROM 7:30 A.M. TO 4:00 P.M.

IF ATTEMPTS TO REACH THE EXAMINER BY TELEPHONE ARE UNSUCCESSFUL, THE EXAMINER'S SUPERVISOR, GARY KUNZ, CAN BE
REACHED ON (703) 308-4623.

IF SUBMITTING OFFICIAL CORRESPONDENCE BY FAX, APPLICANTS ARE ENCOURAGED TO SUBMIT OFFICIAL CORRESPONDENCE TO
THE FOLLOWING TC 1600 BEFORE AND AFTER FINAL RIGHTFAX NUMBERS:

BEFORE FINAL (703) 872-9306

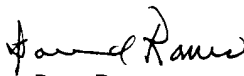
AFTER FINAL (703) 872-9307

IN ADDITION TO THE OFFICIAL RIGHTFAX NUMBERS ABOVE, THE TC 1600 FAX CENTER HAS THE FOLLOWING OFFICIAL FAX
NUMBERS: (703) 305-3592, (703) 308-4242 AND (703) 305-3014.

CUSTOMERS ARE ALSO ADVISED TO USE CERTIFICATE OF FACSIMILE PROCEDURES WHEN SUBMITTING A REPLY TO A NON-FINAL
OR FINAL OFFICE ACTION BY FACSIMILE (SEE 37 CFR 1.6 AND 1.8).

FADED DRAFT OF INFORMAL COMMUNICATIONS SHOULD BE DIRECTED TO THE EXAMINER AT (703) 308-0294.

ANY INQUIRY OF A GENERAL NATURE OR RELATING TO THE STATUS OF THIS APPLICATION OR PROCEEDING SHOULD BE DIRECTED
TO THE GROUP RECEPTIONIST WHOSE TELEPHONE NUMBER IS (703) 308-0196.



DAVID ROMEO
PRIMARY EXAMINER
ART UNIT 1647